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THE ASYMMETRY OF THE IMAGINATION[1]

IT appears that human minds, at least some of them, are blessed with a variety of lights. There is the light of ocular perception, commonly objectified, and usually identified with solar radiance or with that of electricity or that of a burning tallow candle. There is the light of the imagination in which, with or without the eyes being closed, one may behold things that may or may not correspond to things previously beheld in perceptional light and that, following the psychological nomenclature of the ancient atomists, are often unhappily called "images," as if they were given-off masks or copies of objects dwelling and revealed in the light of perception. If the metaphor may be allowed, the rays of imagination's light are not always straight. They may bend, curve, and converge so as to present a view of something around the corner, or of an aspect turned away from the beholder as the opposite phase of a sphere. Every one may know that in the light of imagination things are disclosed whose perceptional correspondents have not been seen and may not exist. Indeed, the geometrician finds his occupation to consist largely in the beholding and contemplation of configurations whose conceptual correspondents may have been previously indicated by analysis as distinguished from spatial intuition, or which may, after their own manner, have just "dawned upon his imagination," without their ever having been clad in ether-reflecting garb or touched by a solar ray. Then there is the light of thought—the light of analysis, whose objects, like number, for example, do not inhabit space—very different from the other two kinds of light, illuminating the way where the light of perception fails, penetrating infinitely beyond the utmost reaches of the light of imagination, knowing no bounds save the barriers and limitations of logic; the beautiful, gray, ubiquitous light it is in which one beholds, suspended in their nakedness and purity, the intellectual structures known as theory, woven of concepts and re-

[1] Paper read before the tenth annual meeting of the American Philosophical Association at Princeton, December 28, 1910.

lationships—the ganglia and netted neural fibers of being—witnessing to the rationality of the human spirit and serving it as types and standards for the criticism and estimate of worlds. That there is a yet higher and finer kind of light, a light peculiar to the higher emotions, a radiance and glory of things not revealed in the lights of ocular perception or imagination or thought—I own to having something more than a mild suspicion that there is such a radiance and glory, but I shall not pursue the inquiry in this connection. Of the varieties of light mentioned, it is that of imagination and that of thought, or rather it is the powers or faculties, imagination and thought, which reveal those lights and the things that dwell therein, it is these faculties that I wish to speak of here.

Some years ago, when lecturing on a hypercomplex of geometric elements in space of fourfold dimensionality in points, I was struck by a strange phenomenon in the field of the imagination. The hypercomplex—call it H—was represented by an equation, as $F = 0$. Now four-space is exactly as rich in lines as it is in planes, containing a sixfold infinity of elements of either kind. The ten variables in F were connected by just enough identities to leave the variables equivalent to six independents, and thus to render them available as line coordinates or as plane coordinates in four-space. Accordingly, as the equation, $F = 0$, imposed one additional condition on the variables, the H represented by the equation was a configuration composed of a fivefold infinitude of lines, if the variables were regarded as line coordinates, or of a fivefold infinitude of planes if the variables were regarded as plane coordinates: a rather numerous array of elements when taken absolutely, but meager enough in comparison with the total ensemble of lines or planes contained in four-space. The question was, supposing H to be composed of lines, how were the lines distributed or disposed throughout four-space? What sort of configuration was this H? What did it look like? What was the character of its make-up and constitution? And, supposing H to be composed of planes, the same question was put concerning them. How were the planes distributed? How disposed and related? In a word, H being composed of lines or of planes, what were the properties of H? To answer, it was necessary to dissect H, to cut it, so to speak, with simpler configurations, and to examine the traces or intersections; that is, to examine the configurations composed of the elements common to H and the cutting configurations. If H as line configuration were cut by certain line configurations $C_1, C_2, \cdots$, the intersections were certain other line configurations $\gamma_1, \gamma_2, \cdots$. If H as plane configuration were cut by plane configurations $C', C'', \cdots$, the intersections were certain other plane configurations $\gamma', \gamma'', \cdots$. When $C_1, C_2, \cdots$ were respectively the same logically, *i. e.*, in thought,

as C', C'', $\cdots$, then γ_1, γ_2, $\cdots$ were for thought, *i. e.*, logically, the same respectively as γ', γ'', $\cdots$. In this fact there was nothing to surprise, it was evident *a priori*, for H as line configuration and H as plane configuration are, by virtue of their identical algebraic definition, $F = 0$, one and the same in logical make-up, in conceptual constitution, in their character as thought structures. The surprise came when it was observed—and this is the unexpected phenomenon alluded to above—that, albeit the γ-configurations are one-to-one logically identical with the γ'-configurations, the former do not disclose themselves in the light of imagination equally with their correspondents among the latter. A given γ-configuration may disclose itself wholly, partially, or not at all without the same being true, or true in the same measure, of the corresponding γ'-configuration. So that, whilst thought pursued a straightforward course in the domain under consideration, imagination was constrained by its own limitations to a zigzag course. Whilst thought spread its characteristic radiance equally everywhere throughout the fourfold domain, the brighter light of the imagination shone but here, there, and yonder, in patches and spots, like the patines of golden light that of a clear summer day one may see on leaf and ground and tree-trunk in the depths of a thick forest.

The phenomenon ought, it seemed, to be of interest to students of psychology. Its bearings upon other matters may or may not be important. Time, if the matter be followed up, may determine that. The immediate task is to bring the phenomenon into clearer view, to display it, if possible, in a field less remote and less difficult of access than that in which it was first observed, and thus to render it observable and unmistakable to such as may not be prepared to pursue far the ways of geometric interpretation. This task can be performed as follows by the help of considerations demanding but a very slight knowledge of algebraic methods applied to the study of space. It will be observed that the procedure exemplifies the possibility of employing analytic geometry as an instrument for investigating some aspects of the nature and behavior of the human mind. I have no doubt the time will come when mathematical methods will be recognized as an indispensable part of the proper equipment of the philosopher and the psychologist, and when, accordingly, in our colleges and universities there will be regularly offered mathematical courses specially designed for such students. That the applications of mathematics are destined to be confined to fields now conventionally described as the fields of natural science is a belief having its ground in a rather prosaic infidelity respecting the similitudes that penetrate and ally all the forms of spiritual activity.

In the title of this paper imagination is described as asymmetric.

On the other hand, it will be contended that thought, at least in the domain under consideration, is symmetric. What precisely is the meaning of these adjectives as thus employed? The question admits of a perfectly clear answer, as follows: Consider the expression

$$u_1x_1 + u_2x_2 + u_3x_3 + \cdots + u_nx_n + 1.$$

Denote it by the symbol $E(u, x)$. Observe that the u's enter the expression just as the x's enter it, it being quite indifferent, owing to the law of commutation here assumed, whether a given u comes before its x or after it. $E(u, x)$ is, on this account, said to be symmetric as to the u's and the x's. Next consider the equation, $E(u, x) = 0$. It, too, for the same reason, is symmetric in the same respect. The x's may be taken to be the coordinates of a conceptual point in a conceptual space S_n of n dimensions. Then the equation, imposing one condition on the variability of the x's, will represent or define in S_n an $(n-1)$-fold infinitude of points constituting in S_n a conceptual space S_{n-1} of $n-1$ dimensions. It is plain that to two different sets of values of the u's there will correspond two distinct spaces of the type S_{n-1}. Hence in S_n the u's may be taken to be the coordinates of the element S_{n-1} just as the x's were taken to be the coordinates of the point. The two conceptual interpretations, one of the x's and one of the u's, are naturally described as symmetric interpretations. Note carefully that, if the u's be held fast and the x's be allowed to vary subject to the condition, $E(u, x) = 0$, this equation represents some S_{n-1} as an ensemble of the points contained in it; and that, if the x's be held fast and the u's be allowed to vary subject to the condition, $E(u, x) = 0$, the equation represents a point as an ensemble of the spaces S_{n-1} containing it. Naturally these two interpretations, one for the u's constant and the x's variable, the other for the x's constant and the u's variable, of one and the same symmetric equation, $E(u, x) = 0$ or $E(x, u) = 0$, are to be themselves characterized as symmetric. The same is true of the following pairs of interpretations. If $E_1(u, x) = 0$ be a definite space S'_{n-1}, and $E_2(u, x) = 0$ represent another definite space S''_{n-1}, then the equation, $E_1(u, x) + \lambda E_2(u, x) = 0$, as λ varies, will represent, one after another, the single infinitude of spaces S_{n-1} that have in common the intersection, an S_{n-2}, of S'_{n-1} and S''_{n-1}; whilst, if the first two equations be interpreted to represent two points P' and P'', the third will, as λ varies, represent, one after another, the single infinitude of points on the line determined by P' and P''. Once more, according as $E_1(u, x) = 0$, $E_2(u, x) = 0$, and $E_3(u, x) = 0$ be construed to represent three independent spaces S'_{n-1}, S''_{n-1}, and S'''_{n-1} or three independent points P', P'', and P''', the equation, $E_1 + \lambda E_2 + \mu E_3 = 0$, will, as λ and μ vary, represent, one after another,

either the twofold infinitude of spaces S_{n-1} having in common the intersection, an S_{n-3}, of S', S'', and S''', or the twofold infinitude of points in the plane determined by P', P'', and P'''. And so on and so on. Let not the reader falter if as yet he fail to see the outcome, for this will presently be clear.

Let it be noted and borne in mind that the foregoing pairs of symmetric interpretations are conceptual interpretations, interpretations by, in, and for thought—thought-interpretations, as they may be conveniently called. Denote the two of an arbitrary pair of them by $T(u)$ and $T(x)$, according as the u's or the x's are constant. Now imagination attempts in *its* way to make interpretations that correspond to—I do not say copy—those made by thought. In other words, imagination seeks to behold in its peculiar kind of light objects that correspond to or match the objects beheld by thought in its own kind of light. And in this function imagination succeeds perfectly if n be not too large, and never completely fails, however large be the value of n. Denote the imagination interpretations corresponding to $T(u)$ and $T(x)$ by $I(u)$ and $I(x)$, respectively. Now suppose that $n=2$; then S_n is a plane. Then, if $T(u)$ is the interpretation of $E(u, x)=0$, $T(u)$ is the *concept* of a range of points, the ensemble of the points of a line, and $I(u)$ is the corresponding object in imagination's light, namely, the so-called "image" or "picture" of a range of points; whilst $T(x)$ is the concept of a pencil of lines, the totality of lines (of the plane) through a point, and $I(x)$ is the "image" of a pencil. Still keeping $n=2$, if $T(u)$ is the interpretation of the equation, $E_1(u, x)+\lambda E_2(u, x)=0$, then $T(u)$ is the concept: a variable range of a pencil (of ranges) determined by the ranges S' and S'', and $I(u)$ is the corresponding thing beheld by the imagination; whilst $T(x)$ is the concept: a variable point of a range determined by the points P' and P'', and $I(x)$ is the corresponding object in the field of imagination.

In order to gain all needed facility in the matter, let us pursue the parallelism in the case that $n=3$. It will be observed that here, just as when $n=2$, the objects presented to imagination perfectly match their correspondents presented to thought, though an object of the one set is as radically different from its correlative in the other as the definition or concept of a type of harmony is different from the harmony itself to a deaf Beethoven. As n is now 3, S_n is ordinary space. If $T(u)$ and $T(x)$ be the thought interpretations of the equation, $E(u, x)=0$, then the former is the concept of a plane of points, the latter is the concept of a point (or bundle or sheaf) of planes, the totality of planes having a point in common; whilst $I(u)$ and $I(x)$ are respectively imagination's correlatives of the two concepts. If $T(u)$ and $T(x)$ are interpretations of the

equation, $E_1(u, x) + \lambda E_2(u, x) = 0$, then the former is the concept of a variable plane of the axal pencil (of planes) determined by the planes S' and S'', *i. e.*, the total ensemble of planes having a range of points in common, and $T(x)$ is the symmetric of the other, namely, the concept of a variable point of the range (of points) determined by the points P' and P'', the total ensemble of points common to a pencil of planes; whilst $I(u)$ and $I(x)$ are the things representing those concepts in imagination. Finally, denoting by the T's the conceptual interpretations of the equation,

$$E_1(u, x) + \lambda E_2(u, x) + \mu E_3(u, x) = 0,$$

the E's being supposed independent, then $T(u)$ is the concept of a variable plane of the bundle (of planes) determined by the three planes S', S'', S''', and $T(x)$ is the concept of a variable point of the plane (of points) determined by the three points P', P'', P'''.

One more step, and we shall have reached the goal. Before taking it, it is essential to note the following matters.

A.—As n increases more and more beyond the value 3, neither $T(u)$ nor $T(x)$ fails in any degree whatever, but both $I(u)$ and $I(x)$ fail in part, though not completely.

B.—For every value of n, $T(u)$ and $T(x)$ are symmetric interpretations; and so, too, are $I(u)$ and $I(x)$, though these two are incomplete for n equal to or greater than 4.

C.—From the fact that the interpretations $T(u)$ and $T(x)$ are symmetric, does it follow that the faculty, thought, which produces them is symmetric or functions symmetrically? No, for there are degrees of symmetry, so that of a pair of symmetric thought interpretations the one might be, as an interpretation, less complete than the other, in which case the faculty, thought, producing them would have to be said to function asymmetrically. Is, then, thought asymmetric? No, it is symmetric. Why? Because the $T(u)$ and $T(x)$ of any pair of symmetric interpretations are *equally*, being absolutely, complete. Is the faculty imagination symmetric? No, it is asymmetric. Why? Is it because for some values of n the interpretations, $I(u)$ and $I(x)$, although symmetric, are incomplete? No, imagination is said to be asymmetric or to function asymmetrically because, for higher values of n, the symmetric interpretations, $I(u)$ and $I(x)$, are, as we shall presently see, *unequally* incomplete, failing, that is, in respect to completeness as interpretations, in unequal measures.

To show this inequality and therewith to establish the thesis of this paper, it suffices to take n equal to 4. S_n is now S_4. The $T(u)$ of the equation, $E(u, x) = 0$, is the concept of a space, S_3, of points, and $T(x)$ is the concept of a threefold infinitude, a hypersheaf, of

such spaces—call them lineoids—the total ensemble, then, of lineoids that, in four-space, have one and but one point in common. Now a lineoid of points and a point (or hypersheaf) of lineoids are logically or analytically exactly alike, any system of postulates serving as basis for the geometry of either of them serves equally well for the other, and either of the concepts gives an absolutely perfect and complete interpretation of the equation in question. But now consider imagination's correspondents of $T(u)$ and $T(x)$, namely $I(u)$ and $I(x)$. The former should be an "image" of a lineoid. Now a lineoid, or an S_3, being naught but an ordinary space, such as that in which we reside, is fairly well, though not completely, disclosed in the light and realm of imagination. $I(x)$, on the other hand, should be the "image" of a hypersheaf of lineoids, a threefold infinitude of lineoids enveloping a single point. But this "image"—and here is the crux of the matter—imagination fails to produce with a degree of completeness even remotely approximating that of $I(u)$. Here, then, in the case of $I(u)$ and $I(x)$ we have a perfectly clear and unmistakable example of asymmetry in the functioning of imagination. And the region we are operating in abounds in similar examples, many of them being even more striking in character. For another example, let $T(u)$ and $T(x)$ refer to the equation, $E_1(u, x) + \lambda E_2(u, x) = 0$. Then $T(u)$ is the concept: a variable lineoid of a pencil of lineoids, single infinitude of lineoids, determined by the lineoids S' and S''; $T(x)$ is the concept of a variable point (vertex of a hypersheaf of lineoids) of the point range determined by the points P' and P''. Here again the thought interpretations are perfect and complete. As to the corresponding "images," $I(u)$ and $I(x)$, no one can fail to see that in respect of completeness or incompleteness as matches for $T(u)$ and $T(x)$, the I'*s* are widely asunder. A yet more illuminating example is that wherein $T(u)$ is the concept of a variable lineoid of the hyperpencil of a twofold infinitude of lineoids enveloping a line of S_4, where the corresponding $T(x)$ is the concept of a variable point of a plane, and where $I(u)$ and $I(x)$ are to be the corresponding objects in the light of imagination. It is needless, however, further to multiply examples from four-space, much less from spaces of higher dimensionality. The case is clear. In respect to spatial interpretation the power or faculty of thought is symmetric and that of imagination is asymmetric. The former, as n increases, looks about in spaces of ever increasing dimensionality like a binocular being with its twofold vision unimpaired, its light is spread abroad equally everywhere; whilst the eyes of imagination not only fail as n mounts higher and higher, but fail in *unequal* measure. Its light is but partial and fragmentary, scattered and

suspended here, there, and yonder, like shining clouds in a sky filled and illuminated by a milder and gentler radiance.

CASSIUS J. KEYSER.

COLUMBIA UNIVERSITY.

THE THEISTIC READJUSTMENT OF IDEALISM

ONCE the "cardinal principle of idealism" has been accepted as the fundamental doctrine of our philosophy, there are, roughly speaking, four probable views as to the constitution of the universe. First, thinkers may be divided into monists or absolutists and pluralists in respect of their attitude toward the reality of individual selves. And, secondly, as regards their belief in the reality or illusory nature of time, each of these may be classified as dynamic or static, respectively. The majority of historical systems, in their ontological aspects, may then be roughly arranged as belonging to one or other of those four groups, although the epistemological groundwork and historic setting will vary widely in different cases. Similarly the questions of the temporal and eternal, and of the one and the many, have been the leading *causæ belli* of historic philosophy. Both problems were familiar to Plato, the doctrine of ideas, as developed in the earlier dialogues, representing an attempted solution of both in the light of a single systematic principle.

Now these problems again reappeared when the early apologists of the Christian church turned to Greek philosophy in the search for a rational confirmation of the dogmas of their faith. Those dogmas had sprung from a Hebraic and instinctive source, and the simple conviction of the nearness, the omnipresence, of God, which, as Renan has shown, formed the content of primitive Christianity, now came under the influence of the speculative tendencies of the Hellenic mind. Accordingly, various new readjustments of speculative philosophy occurred, always conditioned by the reality of a divine being and an order of things other than the kingdom of this world. These readjustments, however, always took place in terms of the fundamental questions we mentioned above, and the dogma of the Trinity is an example of the result.

Such was the intellectual atmosphere prevalent throughout the Middle Ages, after which the revival of classical culture and the rise of the natural and mathematical sciences attracted attention once more to the temporal and dynamic, and opened afresh the controversy as to where finality might be found. From that time onward the fundamental problems of philosophy, from a strictly metaphysical point of view, have remained the same, though their solution

may be frequently changing in terms of the more general intellectual environment.[1]

With the culmination of the scientific awakening in the philosophy of evolution, it seemed for the moment as if the whole idealistic attitude with its peculiar difficulties had been doomed, and it became the latest task of philosophy, particularly in its religious affiliations, to save itself from this new interpretation of the world. There seemed to be no disputing the facts of evolution within the scientific sphere, but their significance for philosophy was a matter of much debate. The evolutionary attitude, if we look at the matter historically, conflicted with the whole previous idealistic and religious character of philosophic thought, which had developed from Greek and Hebrew origins.

Fresh solutions accordingly arose, attempting to assimilate these new generalizations of science, and other combinations of the fundamental dogmas of historic philosophy took shape. There occurred, in effect, a readjustment within the idealistic camp—a fresh mobilization of its forces, by which it might at once retain its contact with the past and yet ward off destruction in the present. The seeming reality of a fluctuating temporal world had been thrust upon us by the evolutionary interpretation of phenomena, and yet the epistemological groundwork of idealism derived from Kant gave us a world of noumenal selves, and the demands of the religious consciousness would not permit us to lose faith in the traditional theistic tenets of Christianity.

The idealistic readjustment to which I refer—this newer systematic solution, whose adherents form a somewhat influential party in the intellectual chaos of to-day—is the philosophy of theism, best represented, at least so far as our own country is concerned, by the standpoint of personal idealism, notably that of Professor Howison. Perhaps personal idealism and its close relatives are the only distinctly theistic systems in the field to-day, so general is the sway of absolutism in the idealistic camp. And so thoroughly dogmatic are its adherents that it is fortunately less difficult than in the case of certain other writers to mistake the basis upon which it stands with respect to the prime questions of philosophy we mentioned above. As answer thereto, this philosophy gives us two pluralisms, one static and one dynamic, and in addition a wholly static deity or final cause of a veritably Aristotelian stamp. We have, in one system, a world of noumenal selves, a pluralistic but phenomenal world developing in time toward a noumenal goal by a process "we have in

[1] Might not the most rabid humanist admit that it is not the problems of technical philosophy, but only the methods of their solution, which change with new conditions—political and social—of active life?

these days learned to call the process of evolution," and finally an unchanging personal God, the moveless One by whom all things are moved. I wish to say here a few words upon what appears to me to be the untenability of such a position as the fundamental tenets of this system involve, and to suggest that this particular type of metaphysical readjustment is not that which is capable of retaining the traditional theistic convictions of the religious consciousness in the presence of hostile philosophies.

In the first place, for the explanation of change in time, no such bifurcation of the world as this system proposes seems to be required. If there is a changing world, however "conditionally real," why should we suppose there is any other? For if, as I understand Professor Howison at all events to maintain, time is infinite and the evolutionary process without end, then, since the noumenal state is never reached, it might, so far as human experience is concerned, never exist at all. It is, as the pragmatist would say, a conception of no cash value in experience. If, however, the temporal process has a goal to be attained, then we face the enigmas as to how the phenomena can be changing to a state of changelessness, and how a state of existence can be left behind which is itself the condition of the possibility of its being so left. With Schopenhauer, we might cry, "Ah, pity we did not begin sooner, for we should be already there!" If, finally, the changeless—the "essential thought—correlation of minds"—is the real, and about the temporal there lingers some suspicion of unreality, then we fall into fresh difficulties, with which we deal below, while the problem of the relation of the two is also no nearer solution than before.

"Strive as one may," writes Professor Howison,[2] "there is no escape from Kant's implication that not even evolution can produce time in our consciousness. . . . There is for the evolutionist no escaping from Kant's clutches, except he maintain either that succession can exist without time, or else that time is *per se* itself a thing, instead of a relating principle for things. If he takes the former alternative . . . he will have to tell what, in that case, succession intelligibly is. If he takes the latter, he will recede into antiquated metaphysics, which talks about existence *per se*, out of all relation to minds, and which, at any rate in respect to the nature of time, received its quietus in Kant's 'Transcendental Esthetic.' "

Such is the irony of history that it remained for an immediate follower of the author of these lines to embrace the former alternative in attempting to justify the conception of a "pure succession" or "timeless change."[3] But if, with the radical empiricists, declin-

[2] "The Limits of Evolution," second edition, New York, 1904, p. 20.

[3] H. A. Overstreet, "Change and the Changeless," *Philosophical Review*, Vol. XXIII., No. 1, p. 1.

ing to distinguish between a thing and the relating principle for things, we assume that time comes, as James says, "in drops," and embodies relations as given in each pulsation of thought as far back in the flux of experience as we may choose to go, do we thereby "recede into antiquated metaphysics, which talks about existence *per se,* out of all relation to minds"? Only, I should suppose, upon the gratuitous assumption that there must exist a distinction between mind as in or identical with the process and mind as above it—between, that is, the temporal and eternal selves. That some such distinction is made by Professor Howison seems evident from his speaking of evolution as *producing* time in our consciousness, if by "produce" he means "originate," and the alternative assumption that evolution *is* time in our consciousness seems at least equally admissible. Clearly, however, the whole question is as to the reality of that noumenal mind, and to produce that mysterious entity as the chief weapon in an argument which is intended to assure us that no other supposition save that of its existence can be deemed acceptable, is surely a reprehensible, if not uncommon, form of reasoning.

Similarly, Mr. Bradley writes,[4] "If you take time as a relation between units without duration, then the whole time has no duration, and is not time at all. But, if you give duration to the whole time, then at once the units themselves are found to possess it, and they thus cease to be units." No doubt, but would the universe be much worse off if they did cease to be units of such a remarkable character as that,—units, I mean, of no duration? You can not generate a line by compressing points, but who, except Mr. Bradley, is under the obligation of constructing our flowing universe from elements which simply will not flow? May we not say with James[5] that "everything which happens to us brings its own duration and extension, and both are vaguely surrounded by a marginal 'more' that runs into the duration and extension of the next thing that comes"?

However, the question of time and eternity for its own sake is not that with which we are mainly here concerned. Of the "Obsolescence of the Eternal" an abler pen has written recently. Waiving, therefore, the difficulties arising from this source, let us grant the hypothesis of noumena as ends or standards of evolution in phenomena, and ask if these be compatible with traditional theistic theology, and if the latter find here a justifiable defense. Then, since the consummated differentiation of persons *sub specie æternitatis* is sufficient to give us a world of ultimate perfection and timeless self-activity, the combination in one system of an attractive deity, an "impersonated ideal," and a world of mutually determining "per-

[4] "Appearance and Reality," second edition, London, etc., 1908, p. 37.

[5] "Pragmatism," New York, 1909, p. 177.

sons other than God" seems to supply more entities than are required to account for evolution in phenomena.

To begin with, the conception of grades of perfection, necessitated by the differentiated and most perfect deity, is hard to grasp, and leads to further complications beyond its intrinsic ambiguity. If, by reason of my original definition of myself as a member of the eternal "City of God," the utmost achievement of the phenomenal I is the attainment of perfection inferior to God's, then either the evolutionary process would appear to be still incomplete, or else my noumenal self, representing the greatest perfection by me attainable, would be a sufficient guide upon my phenomenal path, without the supposition of a more (most?) perfect final cause. To allege, at this point, that the variety of our graded noumenal perfections implies the complete standard of perfection is but to restate the difficulty. A criterion unachievable would surely be unknown, or, if knowable, would leave an irrational incompleteness in the consummated, but relatively imperfect, noumenal selves. Grades of perfection granted, such a standard might be as logically necessary with reference to noumena as are the latter with reference to the evolutionary selves; but that very necessity, since the standard is in other respects self-contradictory, is sufficient to show that grades in noumena are impossible. A universe where the necessary is irrational, where the ideal is, for the many selves, unreal since unachievable, is not that which any idealistic pluralism could uphold. "Their common aim of fulfilling their one rational ideal" would be a chimera indeed.

Not grades, but varying types of perfection, it may now be said, are what are posited of persons as noumenal. We thus have a differentiated plurality of goals, without the contradictory implication of less and more, and where the whole personality of every individual is absorbed within his unique type of self-activity. God must then be conceived as either one such type or as the unity of all such types in one activity.[6] In the former case, his rôle as final cause, as an attracting criterion, must surely disappear. This is indeed the "finite and pathological God" of Schiller, whom the personal idealist especially eschews, or James's "experiencer of widest actual conscious span."

But if God be conceived as the totally active, that is, as the unity of all such types, then we either predicate of such unity a per-

[6] Professor Howison at one time speaks of God as the "fulfilled type of every mind," and again of his "being included in the circle" of timeless selves. Perhaps the distinction we here make has not, therefore, occurred to Professor Howison, but whichever alternative may be adopted, the sequel will attempt to show that the conception of types of perfection is no more theistic than that of its grades.

fection not embraced in any single type, and return once more to grades of perfection; or otherwise destroy the rôle of differentiated types of activity as descriptive or explanatory, respectively, of the world of noumenal reality and of the world of imperfection and change. Like Royce's "eternal now," such a unity of types finds psychological verification, as, for instance, in the mind of any dramatist, and it might be said to act as a clearing-house, so to speak, for spirits seeing all activities in God, the self-activity of each being only possible as defined in terms of the activities of all. This is, in fact, what has happened to personal idealism at the hands of Professor Overstreet, who has used for such types of self-activity the term "cosmocentric self."

But one does not see that such a position is theistic at all; being essentially that of McTaggart, whose interpretation of Hegel is atheistic, as he himself rightly avows. For in becoming the bare fact of an organic unity—a mere safeguard against a chaos of isolated monads—the deity has really vanished altogether, so far as his independent personality is concerned.[1] It is not easy to see how it should be necessary (or even possible) for me to have my unique function or type of perfect self-activity reflected in a being whose nature is embracive of all types, before it can be appreciated by other individuals. For if the absolute unity of types is self-active, then in appreciating his activity alone we *ipso facto* appreciate the activities of all. Others may then be dispensed with or themselves become passive throughout, and there remains only a solipsistic deity whose very attempt at self-differentiation would be incomprehensible. But if, on the other hand, the unity of types is a passive reflection of our activities, then again we must either dispense with him or deny self-activity, even timeless, as the nature of the real. Besides, if such a unity of types were possible, why should "persons other than God" be restricted to a single variety? If Shylock became endowed with self-activity as an ultimate type of personality, he would cease to be the product of Shakespeare's mind, and would not require Shakespeare's synthetic grasp of the whole drama which forms that epoch of his life in order to appreciate his daughter's lack of gratitude. Contrariwise, if Shakespeare's mind views its creations as differentiations of itself, then they cease to have self-activity or to be in any wise ultimately real. Possibly this last conception is tenable, and it is perhaps the type of monism of Royce, but it certainly does not leave room for a world of free personalities, noumenal or otherwise,

[1] Dr. McTaggart's "Further Determination of the Absolute" reads more like its "Final Annihilation," nor can one see upon what grounds he continues to speak of *The* Absolute.

from which, as data, we set out. Even if some kind of deity be so secured, the world of selves has surely disappeared.

In short, if we are to maintain the hypothesis of a static pluralism as the ground of change in time—supposing this itself were possible—we can not at the same time entertain belief in a personal God. The system attempting this endeavors to accomplish too much at one stroke, nor does it appear possible that theism can justifiably find its champions in that school. Whether it be that the old beliefs are slipping from us, I do not know, but I contend that their defense must take other shape than this, and that the readjustment of idealism here discussed is not that which will synthesize the old and new.

REGINALD B. COOKE.

HARVARD UNIVERSITY.

DISCUSSION

IS CONSCIOUSNESS "A TYPE OF BEHAVIOR"?

PROFESSOR SINGER'S article entitled "Mind as an Observable Object" in this JOURNAL for March 30 provokes reflection on the function of paradox. That function, surely, is to rouse thought, not to conclude it; to give us intellectual impulse, not intellectual satisfaction; to launch our minds, not to bring them to the landing-place. It is a function of importance. But to be content with our paradox is to forget the journey's end.

Professor Singer tells us that "consciousness is not something inferred from behavior, it is behavior. Or, more accurately, our belief in consciousness is an expectation of probable behavior based on an observation of actual behavior, a belief to be affirmed or refuted by more observation, as any other belief in a fact is to be tried out." I will not offer a summary of his argument, but will suppose that the reader has taken the opportunity to acquaint himself with so clever and (but for the essential disappointment) so charming an article. The essential disappointment springs from this: that Mr. Singer rouses us and does not in the least degree appease or satisfy us. He launches us and leaves us at sea.

The reasons why we say we find something in the world of facts which we call consciousness and which distinguishes itself from a behaving body he really does not consider. These reasons are after all simple. Let us try as nearly as may be to take Mr. Singer's point of view. Let us try to state the reasons without the terms of personality, self, etc. For example, at a single moment a certain number of objects, or more or less distinct aspects of objects, are in a

peculiar sense *together,* while those objects and other objects are not in this sense together. One looks across the room, and at a single moment of one's looking certain portions of the wall, the rug, the table, the sofa, are *conjoined.* They are, as the phrase is, "in one field of consciousness." Meanwhile the rug and the window behind me are not in this sense conjoined. Of course the easiest way of putting this is to say that *I am seeing* the first-mentioned combination, and *I am not seeing* the window behind me. But it is quite easy to avoid making these references to self and its "seeing": it is quite easy to put it in terms of the "objective" facts themselves. These facts have a way of being *together,* some of them, while others are not in this sense together.

What this relation turns out at last to be; whether it will involve reference to a third thing, a separate existence called mind, which "turns its search-light" upon certain objects; whether it may be simply a superadded tie between things themselves, which keep at the same time all their physical qualities undisturbed thereby; whether or no it means that when the same object is at once in many differing groups (that is, when many people are looking at it) there must be as many copies of it as there are "groups": these are queries that must not be permitted to distract us from the irreducible minimum of our thesis. Groups there are, and breaches between them there are. Consciousness there is, and oblivion there is. "Consciousness" here is not behavior; it is, according to usage, either the "field" itself or the relation of conjunction between the components of the field.

Clearly this state of being together depends on the relation of the facts to the body of what we call the observer. It depends on that relation, but of course it *is* not that relation. The relation of those objects to the body of the observer is something that physical science is prepared to discuss in full. But the relation of being together or not being together in the sense just stated—that is a term of thought with which physical science never has any concern. It is a term of thought that does not appear in physical science. We can discuss all the relations of "observable objects," organisms and others, and so long as we are discussing them as observable objects, not as actually observed objects, we have simply no use for this term of thought. Even discussing them as actually observed objects, if by "actually observed" we mean standing in certain relations to the retinas or other sense-organs of a neighboring body, we have no use for the conception. It is only when observedness is taken in a different sense, that is, precisely in the sense above described, and from the point of view of the observer, that it brings into thought the fact of objects *being together* or *not being together* in this peculiar manner.

It is these pools of conjoint phenomenality that Mr. Singer completely ignores. I do not mean that he fails to explain their existence. This is not a question of explanation or cause. I mean that he fails to recognize their existence. This is a question, not of accounting for consciousness, but of observing its real character in the world. If mind is an observable object we must not allow its most essential characteristics to escape us.

It may indeed be truly said that this relation is not *at first* brought into an observer's thought. Whenever I perceive, it is by the nature of the case the objects that *are* together that appear before me—for being together and appearing before me are one. It is only when I am forced to contrast the relation of the objects conjoined to each other with the opposed relation between objects not conjoined that I begin to see what conjunction is.

Suppose now that I observe an observer; I look at the body of some one who is looking at objects before him. Unless his eyes look and his brain acts, the group of objects in front does not "appear" to him. Does his brain in some wise generate or physically parallel a picture of the objects? Is it in that picture that his vision consists? If so, is it possible to describe this mental picture as a "type of behavior" of cerebral molecules? These questions or the like are what some would put to Mr. Singer. I do not put them. I wish to avoid dubitable assumption and the dread and endless serpent-coils of metaphysical controversy. I ask him only to recognize the fact called "a field of consciousness" (excluding and including) which is not a topographical division of things or a physical segregation at all.

Of course there are other questions one might ask. One might turn to those phenomena in consciousness which are not commonly called objects. In what sense is the sting of another's pain an observable mode of behavior of his organism? How can "our belief" that a friend is now suffering pangs of grief be identical with "an expectation of probable behavior"? On this question of content, as on the other question of isolation, Mr. Singer gives us no perceptible light. He not only does not prove his paradox, he takes no steps to prove it. His trumpet sounds the charge so lustily, however, that if the night is sufficiently dark the enemy may surrender under the impression that he is overwhelmed.

In the face of what is so purely a night-attack, all that we want is more illumination. Mr. Singer's previous work is our surety that he will have abundant answer ready for such queries. I do not know whether I shall be so fortunate as to elicit his explanations, which I desire for the sake of my own insight into an intricate problem. In

any case, by way of defining my difficulties more fully, I will touch on some of his incidental remarks.

> It is so far from self-evident that each man's mental state is his own indisputable possession that no one hesitates to confess at times that his neighbor has read him better than he has read himself. . . . No one finds fault with Thackeray for intimating that the old Major is a better judge of Pendennis's feeling for the Fotheringay than is Pendennis himself.

This is not a question of knowing our feelings, but of knowing how our feelings will develop or continue. To have a feeling and to be acquainted with it are the same thing. If a man does not know whether he is in love, it means that he does not know whether what he actually feels is or is not a sign of a continued disposition to feel and to act such as goes under that name.

> It is quite as likely that, under certain conditions, I do not know what red is, as that, under other conditions, I do not know what love is.

This is not a question whether I am acquainted with my own sensation, but whether I am acquainted with the social name for my sensation.

> You will ask me: What aspect of the behavior of certain objects leads us to call them conscious? I answer, I do not know, and expect never surely to know. Had I been asked: What aspect of the behavior of certain objects leads us to call them alive? I must have returned the same answer. . . . But though I don't know what life means, nor what consciousness means, I feel that I know how we may go to work to find out these things, if once we see that neither stands for an eject forever veiled and hidden in the land beyond experience.

Once more, the question what leads me to call a man conscious, and the question what consciousness means—is Mr. Singer assuming that they are the same question? Are the nature of a thing and the tokens by which I infer its presence the same? As to the land beyond experience—that is, my own present experience—is there no such land? What of my own past experience? What of those past experiences which I feel sure I had but can not now recall? If it is not my own present experience which is meant, but experience in general, then the "ejective" experience of another lies within the land of experience and not beyond it.

> Men had courage to say, "Heat is not something inferred from the heated behavior of a body, it is that behavior. A hot body differs from a cold body only in the way its parts move." The mystery had vanished.

Mr. Singer is not here carrying on his main thought, but referring to what he regards as an analogous problem. But his passing words give us pause. Is the perceived quality of heat—as individual a concrete fact as the perceived color red—nothing but the way certain particles move? If not—if the perceived quality of heat is not this, but objective "heat" as meant by Mr. Singer is this,

then the perceived heat is not the behavior of the body called hot. In that case perhaps the perceived heat is something in our consciousness. Then, by the theory, it is nothing but the way our own body moves, or the way certain particles of it move. But how can perceived heat or red color be identical with the change of place of particles of any body whatsoever? They can not; any more than what we mean by perceived heat can be red color, or than what we mean by red color can be perceived heat.

The truth is that Mr. Singer and some of the vigorous and enterprising new realists, to whose thought his own seems allied, play with our best hopes and dash them in a somewhat unfeeling manner. A more pregnant and momentous proposition in philosophy than this, that consciousness *can* be resolved into the behavior of organisms, it would be hard to produce. Of such stuff is great discovery composed. For such a stride forward in metaphysic, such a stride of arrival and of escape from perplexity, all open minds are looking. We give our best heed at once. How can consciousness be so resolved? How can the old obstacles be surmounted? Here, alas! Mr. Singer and his school begin to talk of something else, such as the assumptions of idealism (I am not arguing for idealism), or of "English sensualism," or they mention that their philosophy will come to our difficulties after a while. Perhaps they say that they have not yet reached the category of consciousness, which is a late and secondary product. In that case they can hardly have arrived at the proposition that consciousness is behavior. Indeed, in some of the programs, platforms, and preambles of the new realism we are left to infer that the proper method is to come to conclusions, and then brace ourselves to meet the problems whose solution alone could warrant any conclusion on the subject. We are informed of the conclusions of arguments that can hardly be said to have begun. Is not philosophy heir to any of that spirit of cautious and plodding verification for which the name of Darwin stands?

If there is wide change in the tendency of philosophical opinion in these years, it is not because circumspect reason has at length rejected old ideas. It is rather because philosophy has lain a long while on one side and wants to turn over. Just when we are wishing as citizens to put forth the hand of science to steer society and institutions in some degree and deliver them from the blind tides of wilfulness and custom, just then it is that we wake up to see the same tides heaving in the sciences. What shall deliver the deliverer himself? Nothing but a taste for real solutions—which is the same as intellectual scruple. Nothing but common sense untried—which is the same as pertinacity in logic. Nothing but looking about us before we advance—sweeping the horizon of our subject—circumspection;

that last rule of Descartes's method, followed as far as human vision can, "to make enumerations so complete and reviews so general that I might be assured that nothing was omitted."

These fragmentary notes are not written with a destructive intent—as little as they are likely to have any destructive effect. I am by no means sure that on this matter Mr. Singer has not in reserve something indestructible. They are written to elicit, directly or otherwise, the fuller thought which must lurk behind; and to emphasize the cardinal principle which we may one and all devoutly repeat to ourselves as we clutch our reason; the principle laid down by the old lady in "Middlemarch" or "Daniel Deronda": "We must all make a little effort every day to keep sane and use words in the same senses."

DICKINSON S. MILLER.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Notes on the Science of Picture Making. C. J. HOLMES. New York: D. Appleton & Co. 1909. Pp. xxiii + 317.

The diffident title of this book does more credit to the modesty of its author than justice to the significance of its contents. Mr. Holmes is the successor of Ruskin. He holds the Slade professorship in fine arts at Oxford, Ruskin's old chair, but fortunately there is no sign in the book that he holds also Ruskin's outlook and Ruskin's idiosyncrasies. Writing in an unusually lucid, easy style, he approaches his problem with an openness of mind and a sanity of view as extraordinary as significant in the curious anomalies of contemporary criticism of art. Keeping, with professorial naïveté, to one or two inept and even clumsy usages, as where he says "infinity" when he means "suggestiveness," Professor Holmes nevertheless manages to point out with absolute clearness the most obvious, and hence most unnoted, aspects of the rôle played in painting by "design," "material," and "character." His exposition is preceded by a notable introduction, the point of which is to assert the commonplace, and hence to critics and the half-educated, the startling, fact that there is no one, single, indivisible, absolute beauty of objects—estheticians and philosophers to the contrary notwithstanding. "In spite of all the mighty names connected in one way or another with the criticism of the fine arts, we have still no fixed standard for passing judgments on pictures already existing; much less such a system of training the intelligence as will save us from making blunders as to future productions. . . . In esthetics we seem still to be as far from . . . unity as were men of science three centuries ago." The comment is as kindly as it is just, for conceivably worse things might have been said about esthetics—it might have been accused

of irrelevancy, artificiality, and gross stupidity, not merely of discord. One must, of course, bear in mind that Professor Holmes means by "fixed standard for passing judgments on pictures," a technological and professional standard, not a psychologic and evaluative one. The latter, as yielded in the nature of the "esthetic experience," has been correctly defined in its essentials since Plato. The mistake has lain in trying to derive from *it* the nature of its conditions, *i. e.*, the "causes" of constructive art; for the experience is derivable only from the conditions, not the conditions from the experience.

The two fundamental requirements for excellence in painting Professor Holmes holds to be "emotion" and technique. Mere technical power tends to make a picture clever and empty; mere emotion will make no picture whatever. Theories of painting, as against manual skill and vigorous insight, are of secondary importance. They are in any event contingent on the medium used and the subject-matter to be presented. Pictures can not be made according to absolute rules; rules have to be accommodated to pictures. Now the content of these pictures must not be photographic, but "designed," invented, imagined; not, however, irrelevantly, but in terms of nature. Nature is to be used, but not to be imitated. As Whistler wrote in the "Ten O'clock," "To say that nature is to be taken as she is, is to say to the player that he may sit on the piano."

The content of pictures, then, being abstracted from nature for the purpose of portrayal with technical perfection and spiritual fervor, will exhibit in those pictures at least four qualities "which all fine pictures in some degree possess, of which mediocre pictures lack at least one, and of which bad pictures lack at least three." These qualities are unity, vitality, infinity and repose. Their presence depends upon pictorial design, *i. e.*, on emphasis of this or that "value," subject to pictorial conditions determined by "symbol," place, spacing, recession, shadow, color, material. "If unity may be said to give a painting coherent structure, vitality to inspire it with the breath of life, infinity to redeem it from shallowness, repose may be said to endow it with good manners."

This imposing array of terms, contrary to critical usage, really means something, collectively and severally. I am not sure that in the first instance they may not be reduced to two or at most to three, for certainly there can be no repose in a picture without unity or coherence, without an integration and balance of parts, and when a picture has such an integrative repose it has unity. Nor does the difference between vitality and infinity seem altogether irreducible. The "sense of life in a picture," or vitality, is hardly distinguishable from the "element of uncertanty or evanescence in spacing, in tone, in color, or in line," *i. e.*, infinity. For if Professor Holmes means by infinity only delicacy and refinement, and by vitality only vigor, these two qualities can not be present in one coherent pictorial unit at the same time. If, however, "infinity" means just that suggestiveness which is due to the cumulative effect of vigor and vitality which subtlety of rhythm, coloration, etc., yield, the two are identical; "vitality" being only a term for the more obvious aspects of the "infinite" variety. From this point of view, the qualities required in a

picture are unity and vitality, and these are permanent in so far as they are pervasive. Then in the first case they give "repose," in the second "infinity."

The materials to be used in the design which should possess these qualities are denoted by the second set of terms. By "symbol" Professor Holmes means "devices or signs used by the artist to convey his meaning, or to transmute natural phenomena into terms of art"; by plan, "the surface disposition of the lines and masses in a picture"; by spacing, "the proportions masses bear to one another"; by recession, "the apparent nearness or remoteness of the objects contained in a picture." Shadow, color, and material carry their ordinary significance. This classification is rather over-empirical, and is capable of reduction, but it has the technological advantage of considering coincident aspects of a picture separately. The rest of the chapters under the heading "Design" are devoted to showing how each of these elements may best contribute to the four necessary qualities of great painting. Space does not permit a detailed review of this sane and interesting study. One can note here only the rather haphazard treatment of the subject, and the omission of any consideration of the synthetic effect of these pictorial elements. For a picture conceivably painted with especial reference to each element, and resulting in each case in a particular perfection, may yet be a bad picture. A series of excellent details may make an abominable whole, as any observer of modern painting knows.

From the study of design Professor Holmes passes to the study of materials. By materials he means the physical content of the painter's instruments of expression. These are distinguished as processes of drawing, engraving, and painting. Drawing may be done in silverpoint, pen and ink, pencil, chalk, pastel, charcoal, and with the brush. Silverpoint will give delicacy of tone, etc.; pen and ink, spirit and sharpness; pencil and chalk, precision of form and gradation of tone; pastel and charcoal, which are modern favorites, will render excellently shadow, strength, and light; while brush-work, which is in execution a process of painting, and in results has the effect of drawing, renders best of all the quality of swiftness.

Under "Processes of Engraving" are discussed the execution and effects of wood-engraving, engraving on stone and on metal. Of the three the first gives the effect of mezzotint; the second, favored by Whistler, has since been commercialized; the third, according as the engraving is done with a tool or with acid, renders a firm and austere line, the trivial results of "stippling," the rich, extravagant individuality of "drypoint," the reproductive accuracy of "mezzotint," or the subtler effects of "etching" and the flat values of aquatint.

The discussion of the methods of painting is bound considerably to interest both lay and professional readers. Professor Holmes distinguishes them as the "transparent method," the "mixed method," and the "opaque method." By the "transparent method," "pigments are used thinly and depend chiefly or entirely for their effect upon light reflected from a luminous ground. The mixed method depends partly upon light

reflected from the ground, and partly upon light reflected from a solid body of pigment," while "the opaque method depends entirely upon light reflected from the solid body of pigment." The latter method is modern and was introduced by impressionists; the mixed method was universally used from the early part of the sixteenth to the latter part of the seventeenth centuries; the transparent method was employed by the very early Flemish masters, the pre-Raphaelites, and some moderns like Orchardson. The elucidation of these methods is assisted with references to the work of De Chauvannes, Watts, Teniers, Gainsborough, Millais, Rubens, etc., and it is put in such a way as to help the worst Philistine toward the appreciation of painting.

The book concludes with a discussion of "the painter's aims and ideals" and the refutation of "some popular fallacies." Professor Holmes distinguishes four classes of paintings—dramatic, lyrical, narrative, and satirical. The first represents a crisis, the second a mood, the third is descriptive, the fourth ridicules. "In practise the groups are usually fused and blended, so that the great majority of easel pictures are not typical of any one group, but should be described as hybrids." This conclusion is as objectionable as the classification. It is as if a naturalist were to say that an animal which is not all legs, or all head, or all body is to be described as a hybrid. As, according to our author, the painter's ideals are defined by the classes his pictures fall under, the painter's mind must also "be described as hybrid." In point of fact the organic unity into which the contents of a good picture are welded justifies and defines those contents; not they, the unity. It is extraordinary that Professor Holmes should have failed to see this, just as it is extraordinary that he should have failed to see the artificiality of his historic division of "art periods" into savage, despotic, individual, and socialistic. So far as the artist himself is concerned, art remains, as our author insists it must, "individual"—*i. e.*, springing from the vital impulse and technical perfection of the artist himself and directed upon whatever task he may have in hand. This is suggested by the summing-up. "The great painter . . . must be at once an individualist and a servant. An individualist because it is unlikely that there is a tradition in which he can profitably allow his personal talent and character to be submerged . . . a servant, in that he must fulfill certain decorative conditions, settled neither by himself, nor usually by his rulers or patrons, but by the habits and customs of his age."

To this dual purpose art education has, in the just opinion of Professor Holmes, failed to contribute anything. Artists begin their careers by aiming for precision, reach its middle point by aiming for "greater breadth of mass," and at its end lose "freedom of brushwork, and a disregard for all minor details." It is right to base our current system on this "generally recognized course of development," but results have been very poor. Our author now analyzes the career of Raphael, Titian, Turner, Rembrandt, etc., and concludes that artists are born into a tradition which they continue or, if not, which they create and develop to a maturity that is their own and the tradition's. Their crisis is at the middle of life, not at its beginning. The only salvation during the crisis

is continual experimentation. The growing painter will "only in early manhood and middle life imperatively need some time of solitude in which to think out the problems of his profession and it is just then that the pleasures of the world are wont to be most importunate and most acceptable." The future of painting will depend partly on this freedom at middle age, mainly on the decrease in number of purchasable "treasures of the past," on the framing of pictures, on the exercise of rigorous selection on the part of the artist, and on his power to deviate just enough from accepted tradition to be fresh without being foreign. What is fundamentally demanded of him is that he shall not give way to popular prejudice and sacrifice "decoration" to "significance" or *vice versa*. He must be neither a carpet-weaver nor an illustrator; he must be an artist, *i. e.*, he must give his picture a decorative quality "fitting that picture alone, arising naturally out of the particular thoughts and things with which it deals, and incapable of being transferred wholesale and applied to some other subject." And this, pictures can not be by being mere decorations in spots or colored photographs. Neither "values" alone nor mere "finish" determines excellence; it is determined by the right use of these as instruments of high emotion. A good picture is "personal experience emphasized by emotion in terms of decoration."

H. M. KALLEN.

HARVARD UNIVERSITY.

The Harveian Oration on Experimental Psychology and Hypnotism. GEORGE H. SAVAGE. London: Henry Frowde. 1909.

Dr. Savage's oration is of interest to American science, not because the address makes a substantial contribution to our knowledge of experimental psychology or of hypnotism, but because it may be regarded as an index of the stage of development of British medicine.

About half of the oration Dr. Savage devotes to a sketch of Harvey's life and times. Seventeenth-century England contributed little intelligence to medical science. The separation of the medical profession from the enervating control of the church had only begun, with the result that human ailments were still given a "spiritual" interpretation, and their cure was still sought in charlatanism, legerdemain, and witchcraft. Harvey, who was regarded as a crack-brained iconoclast because of his independent methods of investigation and his original theories, and who, notwithstanding that fact, displayed unceasing tolerance, was an oasis of exemplary fertility in an arid desert of ignorance and superstition. Despite the lack of sympathy of his contemporaries, which at times amounted to hostility, he concentrated his energies in the service of scientific truth with unwavering industry and unusual singleness of purpose. He had but one aim—to know nature—and but one principle—to believe all those conclusions, and only those, to which his reason led him.

Such open-mindedness Dr. Savage urges his professional brethren to entertain toward experimental psychology and hypnotism. Too prevalent is the feeling in the profession in Great Britain "that experimental psychology is hardly likely to reward those who are devoting their lives to it

. . . and . . . that men of promise are wasting their energies on what will be of little service either to psychology or to medicine." Too general he finds the belief that hypnotism is some sort of "faith cure." Experimental psychology is of importance because it "has shown us how to measure definitely the reactions of the senses to their surroundings, and at the same time it has shown us how readily some of the senses may be deceived, leaving us with an open mind for things at present undefined"; and because only patient experimental research will reveal the complicated variations of human personality.

Hypnotism, which Dr. Savage seems to regard as identical with psychotherapy, he believes to be of general scientific interest and of particular value to medicine. The objections that hypnotism is "mysterious" and "dangerous" he dismisses as irrelevant, inasmuch as all treatment contains an element of mystery for the patient, and as hypnotism has proved, when used intelligently, to be of considerable therapeutic value. Many facts concerning hypnotism have already been established. Physical sensibility has been both suspended temporarily and heightened by its use, and such mental functions as memory have been stimulated. It has been useful in alleviating pain, in producing sleep, and in surgical operations. It has done exceptionally good service in the treatment of mental obsessions.

The aim of this oration—to dispel the conservatism that befogs the British medical mind—is certainly commendable. The substance of the address, however, is rather meager. In the section devoted to experimental psychology no distinction is made between the abnormal and the normal branches of the science. No mention is made of the many facts established by the researches of Bernheim, Binêt, Janêt, Freud, Prince, and Sidis in the one field, or of Wundt, James, Ebbinghaus, Lange, Münsterberg, and Titchener in the other. All that we find is a few matter-of-fact statements about the privacy of one's mental states or the fundamental unity of the sensations, which statements, in addition to being commonplace, are so scant in content as to total only four out of the forty-four pages that comprise the printed copy of the oration. The section on hypnotism, though lengthier than the one on experimental psychology, is largely historical or generally descriptive in nature. Dr. Savage endeavors to emphasize the therapeutic importance of hypnotism by citing actual results; but so embryonic is psychotherapy in England that he is able to summon to his aid only such facts as are patent to the average continental or American psychopathologist.

The condition of psychotherapy in Great Britain—judged by this oration—is little short of deplorable. It is not that Dr. Savage is not sincere and open-minded enough. The difficulty is with the rank and file of the profession who are so conservative that a Harveian oration must degenerate into a plea that scientific men should not reject new truth simply because it is new! May his sincerity fertilize the sterile soil upon which he has strewn rather unpromising seed!

M. J. WESSEL.

BROWN UNIVERSITY.

JOURNALS AND NEW BOOKS

MIND. January, 1911. *Reply to Mr. Joseph* (pp. 1–14): G. F. STOUT. – From a brief reply to Mr. Joseph, Professor Stout advances to a sketch in broad outline of his own general philosophical assumptions. They include his view of the nature of knowledge, the psychology of cognitive processes, and the psychological problems connected with the perception of external objects as independent reals. *The Philosophy of Bergson* (pp. 15–40): J. SOLOMON. – A general survey of Bergson's philosophy, giving an exposition of the contents of Bergson's three chief works, viz., "Time and Free Will," "Matter and Memory," and "Creative Evolution." The exposition is sympathetic, though in the main non-critical. *A New "Law of Thought" and its Implications* (pp. 41–53): E. E. CONSTANCE JONES. – "My contention is that my Law of Identity in Diversity first makes (theoretically) possible a satisfactory statement, in *S is P, S is not P* form, of the Laws of Contradiction and Excluded Middle. . . ." *Motive* (pp. 54–66): J. L. STOCKS. – An examination of different views of motive, its connection with reflection, will, intuition, and feeling, with a view to determining its nature. It is concluded that "motive is best defined by reference to end." *Discussions* (pp. 67–76): On the Distinction between Waking and Dreaming: J. A. J. DREWITT. *Reply to Mr. Russell's Explanations:* F. H. BRADLEY. *Critical Notes:* John McTaggart, Ellis McTaggart, *A Commentary on Hegel's Logic:* BERNARD BOSANQUET. Hastings Berkeley, *Mysticism in Modern Mathematics:* PHILIP E. B. JOURDAIN. Hugh S. R. Elliot, *The Letters of John Stuart Mill:* CAMETH READ. A. E. Crawley, *The Idea of a Soul:* W. MCDOUGALL. E. B. Titchener, *Lectures on the Experimental Psychology of the Thought-process:* HENRY J. WATT. Dimitri Michaltschew, *Philosophische Studien: Beiträge zur Kritik des Modernen Psychologismus:* G. E. MORE. Ralph Barton Perry, *The Moral Economy:* JAMES SETH. Hermann Cohen, *Kants Begründung der Ethik nebst ihrer Anwendungen auf Recht, Religion, und Geschichte:* A. D. LINDSAY. James Lindsay, *Studies in European Philosophy:* H. RASHDALL. *New Books. Philosophical Periodicals. Notes.*

RIVISTA DI FILOSOFIA. November–December, 1910. *L'Individuo* (pp. 541–557): ROBERTO ARDIGÒ. – A study of individualism based upon the dictum of Heraclitus, "one from all and all from one." The result is in ontology materialistic atomism *versus* idealistic solipsism, and in cosmology panpsychism *versus* Spencerian homogeneity. *Conosci te stesso* (pp. 558–577): B. VARISCO. – An historical review of the Socratic "know thyself" from Plato to Fichte; the actualist view of the ego is taken as against the substantialist, the real self being considered an empirical product and consciousness not a form but an organization of experiences. *Il valore teoretico della logica* (pp. 578–598): ANNIBALE PASTORE. – The value of logic is threefold: as empirical, it furnishes a practical exercise of reason; as scientific, it provides a formal guide to all sciences and widens the bounds of their achievements; as philosophical, it

discloses the logic of the universe, not in the Hegelian ontological sense, but in the cosmological meaning of the essential rationality of the universe. *Scienza e Filosofia* (pp. 599–608): ALDO MIELI. – Philosophy is not an independent discipline, but should be confined to the summarizing of the results of positive science, problems of cosmology and of consciousness being unwarranted extensions beyond the bounds of logic or certainty. *I metodi critici di G. Gentile* (pp. 609–611): GIOVANNI MARCHESINI. – A defense of R. Ardigò against the "nauseating" critical methods of G. Gentile. *Bibliografia Filosofica Italiana* (1908–1909) (pp. 612–628): ALESSANDRO LEVI. *Recensioni e Cenni. Notizie,* including a eulogy and a defense of William James against the strictures of the most youthful Italian philosophers, who at first acclaimed him with enthusiasm. *Atti della Società filosofica Italiana,* with an account of the project for reprinting Italian philosophers.

REVUE DE METAPHYSIQUE ET DE MORALE. January, 1911. *Fragments de philosophie morale* (pp. 1–29): F. RAUH. – Some extracts from a book the author is preparing. His conclusion springs from a theory of "the plasticity of collective reality." *Sur le principe d'induction mathématique* (pp. 30–33): VACCA. – The discoverer of this principle is Francesco Maurolico, an Italian mathematician of the sixteenth century. There are other mathematical axioms equivalent to it. *Notes sur la croissance et la différenciation* (pp. 34–63): L. WEBER. – A study of the results and methods of investigation in the new bio-mechanics. *Vues sur les problèmes de la philosophie* (pp. 64–99): G. SOREL. – A study of new movements in contemporary philosophy, and the contributions of certain contemporary philosophers to them. *Études critiques: L'histoire du problème de la connaissance de M. E. Cassirer:* MEYERSON. *Questions pratiques. Réflexions sur la notion et sur quelques fonctions de l'état:* H. BOURGIN. *Supplément.*

Britan, Halbert Hains. The Philosophy of Music: A Comparative Investigation into the Principles of Musical Esthetics. New York: Longmans, Green, and Co. 1911. Pp. xiv + 252. $1.35.

James, William. Some Problems of Philosophy: A Beginning of an Introduction to Philosophy. New York: Longmans, Green, and Co. 1911. Pp. xii + 236. $1.25.

Read, Melbourne Stuart. An Introductory Psychology. New York: Ginn and Company. 1911. Pp. viii + 305.

Swett, John. Public Education in California: Its Origin and Development, with Personal Reminiscences of Half a Century. New York: American Book Company. 1911. Pp. 324. $1.00.

Whittaker, E. T. A History of the Theories of Ether and Electricity from the Age of Descartes to the Close of the Nineteenth Century. London: Longmans, Green, and Co.; Dublin: Hodges, Figgis, and Co., Ltd. 1910. Pp. xiv + 475. 12s. 6d.

Winch, W. H. When Should a Child Begin School? An Inquiry into the Relation between the Age of Entry and School Progress. (*Educational Psychology Monographs.*) Baltimore: Warwick & York, Inc. 1911. Pp. 98.

NOTES AND NEWS

At the meeting of the Aristotelian Society on May 1, Dr. F. C. S. Schiller read a paper on "Error." In attempting to distinguish in thought between truth and error, no help is obtainable from the existing logics. For these either (1) take up an *ideal* or (2) a *formal* standpoint, or (3) pass confusedly from one to the other; and from none of these standpoints is the problem of error visible. Error is either included in (formal) truth, or supposed to have been transcended. To discriminate between truth and error a new logic is required, which does not begin by depersonalizing judgment and abstracting from meaning. Such a logic will note that an "error" is always relative to the context and circumstances of an assertion, and that these are always personal and partial. Error, like truth, rests on a selection of the relevant, because without relevance there is no meaning. But the difference between a true and a false assertion is that the one furthers, and the other thwarts, a human purpose in cognitive activity. It is, in short, a difference in value. But neither valuation is absolute; absolute solutions of cognitive problems are both impracticable and scientifically unmeaning, which is why science is infinitely progressive. It follows that what in knowing we are concerned with is a number of cognitive states intermediate between absolute truth and error, such as lies, errors, methodological fiction, methodological assumptions, postulates, validated truths, axioms, and jokes. These should all be discriminated, and it is particularly worthy of note that, as both in the case of the "lie" and the "joke," the ostensible is not the real meaning of the assertion, and the latter requires a recognition of the maker's intention, any logic which depersonalizes its subject incapacitates itself from distinguishing between falsity and lying and jest and earnest. Hence intellectualism as such is incapable of understanding a joke. Humanism, on the other hand, by making these distinctions, explains why it has always refused to "convert simply" the doctrine, "All truths work." Yet this conversion continues to be falsely attributed to it.—*The Athenæum.*

Professor G. Tschelpanow, of the University of Moscow, has been commissioned by the Russian Government to study the various psychological laboratories in order to complete plans for the erection and equipment of a psychological laboratory in Moscow, the money for which has been contributed by a well-known local benefactor of science and art, $50,000 for the building and $10,000 for its equipment. At the Eighth Annual Meeting of Experimental Psychologists held this spring at Cornell University, Professor Tschelpanow gave some account of the status of psychology in Russia. Although an interest has been taken in it for twenty years or more, its progress has been hampered by the uncertainty of political conditions and by the affiliation of psychology with philology, instead of with the natural sciences, as well as by the fact that Russian universities, having only collegiate rank, do not provide opportunities for research. Laboratories already exist at Odessa, at Kiew, and at Moscow.

Of these the one at Odessa is the oldest and is known through the work of N. Lange. Moscow is, however, the most favorable location for a modern laboratory, as the present one there was started four years ago with more liberal provisions. It has now thirty students in experimental psychology. Russian professors depend to a very large extent upon translations of American text-books, especially those of Sanford and Titchener.

LONGMANS, GREEN, AND CO. have issued "Some Problems of Philosophy, a Beginning of an Introduction to Philosophy," by William James. The first paragraph of the prefatory note by Henry James, Jr., is as follows: "For several years before his death Professor William James cherished the purpose of stating his views on certain problems of metaphysics in a book addressed particularly to readers of philosophy. He began the actual writing of this 'introductory text-book for students in metaphysics,' as he once called it, in March, 1909, and to complete it was at last his dearest ambition. But illness, and other demands on his diminished strength, continued to interfere, and what is now published is all that he had succeeded in writing when he died in August, 1910." Also the dedication: ". . . he (Charles Renouvier) was one of the greatest of philosophic characters, and but for the decisive impression made on me in the seventies by his masterly advocacy of pluralism, I might never have got free from the monistic superstition under which I had grown up. The present volume, in short, might never have been written. This is why, feeling endlessly thankful as I do, I dedicate this text-book to the great Renouvier's memory."

THE Yale University Press announces a volume of essays by the late Professor Sumner. These essays must take the place of the work on "The Science of Society" to which Professor Sumner had been devoting himself for a number of years and to which his volume "Folkways" was intended to be an introduction. The latter work has just been reprinted by Ginn and Co. with important variations of text, with an introductory note by Professor Albert G. Keeler, and with a portrait of Professor Sumner.

PROFESSOR PAUL H. HANUS, head of the department of education at Harvard University, has been chosen to take general charge of the investigation of the New York public school administration conducted by the School Inquiry Committee.

JOSIAH ROYCE, professor of the history of philosophy at Harvard, will be the university delegate at the celebration of the five hundredth anniversary of the University of St. Andrews.

DR. WILLIAM MCDOUGALL'S new book, "Body and Mind," will be published by Luce & Co. before the close of this season.

DR. SAVILLA A. ELKUS, of Columbia University, has been appointed assistant in philosophy at Vassar College.

HENRY HOLT AND CO. are issuing "The Stability of Truth," by President David Starr Jordan.

MISS LILIEN J. MARTIN has been appointed professor of psychology at Stanford University.